RPS Degree College, Balana (Mahendergarh)

Lesson Plan

2019-20 (Even Semester)

Class and Section: Hons. Physics- 4th semester

Subject: Digital Microprocessor and computer lab-II

Name of the Faculty : Ms. Meenakshi

Week	Lecture	Date	Topics
1	2	20/01/20 , 21/01/20	Introduction of Microprocessor
2	2	27/01/20 , 28/01/20	Pin Diagram and its explanation
3	1	04-Feb-20	To evaluate a polynomial
4	1	11-Feb-20	To find roots of quadratic equation
5	**1**		**Class Test 1**
6	1	25-Feb-20	Find sum and average of lists of numbers
7	1	03-Mar-20	evaluate power of number, Calculate factorial
8	1	17-Mar-20	Linear search, solution of simultaneous equation
9	**1**		**Class Test2**
10	1	31-Mar-20	Find largest number , Check prime number
11	1	07-Apr-20	Arrange numbers in ascending and descending order
12	1	14-Apr-20	Manipulation of matrices: Addition, subtraction, multiplication, tracing
13	1	21-Apr-20	Programming on numerical method
14			Final Sessional Test
15			

RPS Degree College, Balana (Mahendergarh)

Class and Section:B.Sc(H.P.) 4th semester

Subject: Mathematics IV

Name of the Faculty : Mr. Satyender Singh

Week	Lecture	Date	Topics
1	7	16/01/20 to 24/01/20	Discrete and continuous distribution: Probability distibution functions.
2	5	27/01/20 to 31/01/20	Moments and mement generating function of discrete and continuous distibutions.
3	5	03/02/20 to 07/02/20	Binomial, Poisson, geometric, normal and exponential distributions.
4	5	10/02/20 to 14/02/20	Bivariate distribution, conditional distribution and marginal distribution.
5	5	17/02/20 to 21/02/20	Correlation and regression for two variables only, Weak law of large numbers.
6			1st Class Test
7	5	24/02/20 to 28/02/20	Central limit theorem for independent and identically distributed random variables.
8	5	02/03/20 to 06/03/20	Definitions and examples of random sample, parameter and statistic.
9	5	09/03/20 to 13/03/20	Revision of complete section 1
10			2nd Class Test
11	5	16/03/20 to 20/03/20	Tests of significance based on t and f distribution alongwith their properties
12	5	23/03/20 to 27/03/20	Sampling distributions chi-square and F- distributions.
13	5	06/04/20 to 10/04/20	Concept of sampling distribution and standard error sampling distribution of mean variance of random sample from a normal population.
14	5	30/03/20 to 03/04/20	Tests of significance based on t.f. and chi-square distributions.
15	5	13/04/20 to 17/04/20	Revision of complete syllabus
16			Final Sessional Test

Lesson plan

Name of the Assistant Professor: Deepika

Class and Section: B.Sc Honors Physics 4th sem

Subject: Mathematical Physics-IV **Sub. Code- Phy-401**

Week	Day No.	Topics	Remarks
1	Day 1	**Basic Introduction about Special function**	
	Day 2	Formal introduction about Beta and Gamma Functions	
	Day 3	Legendre Equation	
	Day 4	Rodrigues formulae, generating functions	
2	Day 5	recurrence relations, orthogonality	
	Day 6	Continue…	
	Day 7	Hermite equation	
	Day 8	Rodrigues formulae, generating functions	
3	Day 9	recurrence relations, orthogonality	
	Day 10	Continue…	
	Day 11	Laguerre	
	Day 12	Rodrigues formulae, generating functions	
4	Day 13	recurrence relations, orthogonality	
	Day 14	Continue….	
	Day 15	Class Test	
	Day 16	Class test distribution and solution	
5	Day 17	Bessel functions : first and second kind	
	Day 18	generating function, recurrence formulas	
	Day 19	zeros of Bessel functions and orthogonality	
	Day 20	Continue…	
6	Day 21	**Question problems**	
	Day 22	Fraunhofer diffraction integral for circular aperture	
	Day 23	Continue…	
	Day 24	**Basic Introduction about Partial differential equation**	
7	Day 25	General solution of wave equation in 1 dimension	
	Day 26	Transverse vibration of stretched string	
	Day 27	Oscillation of hanging chain	
	Day 28	Wave equation in 2 dimensions	

8	Day 29	Wave equation in 3 dimensions	
	Day 30	Vibrations of rectangular and circular membrane	
	Day 31	Continue…	
	Day 32	Question problems	
9	Day 33	Unit test	
	Day 34	Test distribution and Question paper solution	
	Day 35	Derivation of the equation of heat conduction	
	Day 36	Heat flow in one-two-and threedimensional rectangular systems of finite boundaries	
10	Day 37	Continue…	
	Day 38	Temperature inside circular plate	
	Day 39	Laplace equation in Cartesian, cylindrical and spherical coordinate systems.	
	Day 40	Continue…	
11	Day 41	Continue…	
	Day 42	Continue…	
	Day 43	Problems of steady flow of heat in rectangular and circular plate	
	Day 44	Continue…	
12	Day 45	Gravitational potential of a ring	
	Day 46	Continue… Syllabus complete	
	Day 47	**Revision)**& discussion of previous paper **(Unit I)**	
	Day 48	**Revision)**& discussion of previous paper **(Unit I)**	
13	Day 49	**(Revision)**& discussion of previous paper **(Unit II)**	
	Day 50	**(Revision)**& discussion of previous paper **(Unit II)**	
	Day 51	Problems of complete syllabus	
	Day 52	Continue…	
14	Day53-Day57	Final sessional Exam	

Lesson plan
(January-June: 2020)

Name of the Assistant/ Associate Professor: **Ms. Poonam Yadav**
Class: **B.Sc HONS. PHYSICS, Semester- 4**
Subject: **THERMAL PHYSICS** Code**:PHY-402**

Week	Day No.	Topics	Remarks
1	Day 1	**Unit:1 THERMODYNAMICS**	
16 Jan.	Day 2	Basic definition	
-	Day 3	Different terms used in thermodymics	
24 Jan.	Day 4	Zeroth law	
	Day 5	Cont..	
	Day 6		
	Day 7		
2	Day 8	Reversible and irreversible processes	
27 Jan.	Day 9	Cont…	
-	Day 10	Thermodynamic variables	
31 Jan.	Day 11	Numericals and **Assignment**	
	Day 12		
3	Day 13		
02 Feb.	Day 14	Conversion of heat into work	
-	Day 15	First law of thermodynamics	
07 Feb.	Day 16	Revision of Unit: I	
	Day 17	Numerical on first law of thermodynamics	
4	Day 18	Specific heat capacities	
10 Feb.	Day 19	Secomd law of thermodynamics	
-	Day 20	Carnot theorem	
14 Feb.	Day 21	CONT….	
	Day 22	CONT….	
5	Day 23	Thermodynamic temperature	
17 Feb.	Day 24	Clausis inequality	
-	Day 25	**Class test: 01**	
21 Feb.	Day 26	Test discussion	
6	Day 27	Previous year questions of UNIT- I	
24 Feb.	Day 28	Entropy changes in reversible and irreversible processs	
-	Day 29	**Second assignment**	
28 Feb.			

	Day 30	Temperature energy diagram	
	Day 31	Principle of increase of entropy	
7	Day 32	Application of Principle of increase of entropy	
02 Mar.	Day 33	Rivision UNIT-!	
-	Day 34	Cont…	
06 Mar.	Day 35	Thermodynamic potential	
	Day 36		
8	Day 37	Cont….	
09 Mar.	Day 38	Cont…	
-	Day 39	Magnetic work	
13 Mar.	Day 40	Cont….	
9	Day 41	Magnetic cooling by adiabatic diamagnetisation	
16 Mar.	Day 42	Cont….	
-	Day 43	Approach to absolute zero	
20 Mar.	Day 44	Cont….	
	Day 45		
10	Day 46	Change of phase	
23 Mar.	Day 47	Cont..	
-	Day 48	Equilibrium between vapour and liquid phase	
27 Mar.	Day 49	**Class test: 02**	
	Day 50		
11	Day 51	Rivision unit -I	
30 Mar.	Day 52	Clausius –claperyron equation	
-	Day 53	Cont..	
03 Apr.		***Ram navmi***	
	Day 54	Triple point with example	
12	Day 55	Cont…	
06 Apr.	Day 56	Second order phase transitions	
-	Day 57	RIVISION	
10 Apr.	Day 58	RIVISION	
	Day 59	RIVISION UNIT -I	
13	Day 60	Solution of Previous Year Question Papers	
13 Apr.	Day 61	Solution of Previous Year Question Papers	
-	Day 62	Solution of Previous Year Question Papers	
17 Apr.	Day 63	--continue--	
	Day 64	--continue--	

Lesson plan

Name of the Assistant Professor: MR. SOMVEER
Class and Section: B.Sc(H) Physics, Semester IV
Subject: Paper II Vibration and Wave Optics-II (PHY403)

Week	Day No.	Topics	Remarks
1	Day 1	**Basic Introduction of optics (I unit)**	
	Day 2	Diffraction and its two type	
	Day 3	Fresnel Diffraction and its assumptions	
	Day 4	Huygens-Fresnel Theory	
	Day 5	Continue….	
2	Day 6	Rectilinear propagation of light	
	Day 7	Diffraction pattern due to a straight edge	
	Day 8	Continue…Position of Maxima and Minimum intensity	
	Day 9	Intensity at a point inside the geometrical shadow (Straight edge)	
	Day 10	**Numerical problems**	
3	Day 11	Diffraction Pattern at a wide slit	
	Day 12	Continue …..narrow and very narrow slit	
	Day 13	**Surprise Quiz**	
	Day 14	Diffraction Pattern due to a narrow wire	
	Day 15	Continue….	
4	Day 16	Quiz distribution and discussion	
	Day 17	Fresnel Integrals	
	Day 18	Evaluation of Fresnel Integral	
	Day 19	Continue….	
	Day 20	Short revision &**Numerical problems**	
5	Day 21	**Assignment**	
	Day 22	Cornu's spiral	
	Day 23	Continue…..&Assignment discussion	
	Day 24	Introduction of Holography	
	Day 25	Principle of Holography	
6	Day 26	Coaxial Holography	
	Day 27	OFF-Axis Holography	
	Day 28	Recording of Hologram	
	Day 29	Reconstruction of image	
	Day 30	Continue…	
7	Day 31	Theory of Holography	
	Day 32	Continue….	
	Day 33	Application of Holograms	
	Day 34	Major revision&**Numerical problems**	
	Day 35	**Class Test**	

8	Day 36	Test distribution and discussion	
	Day 37	**Basic Introduction (II unit)**	
	Day 38	Fraunhoffer diffraction at single slit	
	Day 39	Intensity distribution in diffraction pattern due to a single slit	
	Day 40	Continue…	
9	Day 41	Fraunhoffer diffraction at a circular aperture	
	Day 42	Continue…	
	Day 43	**Numerical problems**	
	Day 44	Fraunhoffer diffraction at a double slit	
	Day 45	Distinction between single slit and double slit diffraction patterns	
10	Day 46	Fraunhoffer diffraction at a N slit	
	Day 47	Continue	
	Day 48	Plane Diffraction grating	
	Day 49	Theory of plane diffraction grating	
	Day 50	Condition of maxima and minima	
11	Day 51	Width of principal maxima	
	Day 52	Wavelength determination by diffraction grating	
	Day 53	Short revision and **Numerical problems**	
	Day 54	**Surprise Quiz**	
	Day 55	Dispersive power of grating	
12	Day 56	Resolving power	
	Day 57	Resolving power of plane transmission grating	
	Day 58	Continue…	
	Day 59	Difference b/w dispersive and resolving power of grating	
	Day 60	**Numerical problems**	
13	Day 61	Kirchhoff's integral theorem	
	Day 62	Fresnel-Kirchhoff's integral theorem	
	Day 63	Application to diffraction problems	
	Day 64	Problem discussion related Kirchhoff integral theorem	
	Day 65	**Assignment**	
14	Day 66	Major revision	
	Day 67	**Class Test**	
	Day 68	Test distribution and discussion	
	Day 69	**(Revision)**& discussion of previous paper **(Unit I)**	
	Day 70	**(Revision)**& discussion of previous paper **(Unit II)**	

Lesson plan

Name of the Assistant Professor: BALRAM

Class and Section: B.Sc Honors Physics 4th sem

Subject: Atomic & Nuclear Physics **Sub. Code- Phy-404**

Week	Day No.	Topics	Remarks
1	Day 1	**Basic Introduction about Atom and Nucleus (I unit)**	
	Day 2	Rutherford Back scattering experiment (nuclear size)	
	Day 3	Properties of Nucleus (Mass, Density, charge, size)	
	Day 4	Properties of Nucleus (Spin, statistics and parity)	
2	Day 6	Concept of magnetic dipole moment, Quadrupole dipole moment (Shape concept)	
	Day 7	Continue…., Mass defect and Nuclear Binding Energy	
	Day 8	Nuclear Binding Energy (continue)	
	Day 9	Nuclear Stability, **Numerical problems**	
3	Day 11	Models: Liquid drop model..	
	Day 12	Mass formula	
	Day 13	Shell model	
	Day 14	Continue……	
4	Day 16	nuclear forces	
	Day 17	Continue…	
	Day 18	Radioactivity: Law of radioactive decay. Theory of successive radioactive transformations.	
	Day 19	Continue…	
5	Day 21	Radioactive series	
	Day 22	Continue…	
	Day 23	Class Test	
	Day 24	Major revision	
6	Day 26	**Basic Introduction (Atomic Physics) (II unit)**	
	Day 27	Atoms in electric and magnetic fields	
	Day 28	Electron spin, Stern-Gerlach experiment.	
	Day 29	Orbital angular momentum, dipole moment	
7	Day 31	energy in magnetic field from classical viewpoint	
	Day 32	Zeeman effect	
	Day 33	Continue….	
	Day 34	Spin-orbit coupling	

8	Day 36	Fine structure, Total angular momentum	
	Day 37	Continue….test	
	Day 38	Many-electron atoms: Pauli exclusion principle,	
	Day 39	Many particles in onedimensional box	
9	Day 41	Symmetric and antisymmetric wave functions	
	Day 42	Atomic shell model and periodic table	
	Day 43	Spectral notations for atomic states	
	Day 44	Vector model, L-S and jj coupling	
10	Day 47	Doublet Structure of alkali spectra	
	Day 48	Empirical evidence of multiplets	
	Day 49	Selection rules	
	Day 50	Continue…	
11	Day 51	**(Revision)**& discussion of previous paper **(Unit I)**	
	Day 52	**(Revision)**& discussion of previous paper **(Unit II)**	
	Day 53	Test	
	Day 54	**(Revision)**& discussion of previous paper **(Unit II)**	